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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BRINEY III, WALTER F

ART UNIT

PAPER NUMBER

2646

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/748,487

Applicant(s)

BINGEL ET AL.

Examiner

Walter F. Briney III

Art Unit

2646

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 12-14 and 18-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 12-14 and 18-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 14 April 2005 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. **Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claim 14 recites the limitation "said communication device" in line 2. There is insufficient antecedent basis for this limitation in the claim. For the purposes of this action, said communication device is considered to be the "multiple virtual line transmitter" of claim 1.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2646

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 5, 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakano et al. (US Patent 5,479,504).**

Claim 5 is limited to a *method for shunting leakage signals in a communication system*. Nakano discloses a low voltage balanced hybrid circuit with operational amplifiers. See Abstract. Figure 3 depicts one embodiment of the hybrid where two voltage followers (11) and (12) are coupled to respective the tip and ring line of the subscriber loop (15). Each voltage follower is configured with negative feedback, which inherently forms a nearly-zero impedance characteristic. The followers are coupled to the tip and ring line through feed resistors (R_1) and (R_2). One end of the resistors, denoted as nodes B and D, corresponds to the *first communication connections*, and the other ends, denoted as nodes C and E, correspond to the *second communication connections*. The voltage follower configuration prevents any signals originating at nodes B and D from leaking onto nodes C and E, effectively shunting them. Therefore, Nakano anticipates all limitations of the claim.

Claim 21 is limited to a *system for shunting leakage signals in a communication system*. The method rejected in claim 5 inherently requires means to perform each step, where each step and its associated means correspond directly to the means claimed herein. Therefore, Nakano anticipates all limitations of the claim.

Claim 22 is limited to *the system of claim 21*, as covered by Nolde in view of Yoshida. As seen in figure 3 of Nakano, the first and second communication

connections (nodes B, D and C, E) are connected to the shunting means defined by the voltage followers (11) and (12). Therefore, Nolde anticipates all limitations of the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-3, 12-14, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nolde (US Patent 5,920,615) in view of Yoshida et al. (US Patent 6,310,953).**

Claim 1 is limited to a *system for attenuating leakage signals in a communication system*. Nolde discloses a telecommunications switch. See Abstract. As seen in figure 2, a customer's premise comprises a plurality of sockets, including a master (11) and slaves (12). The sockets enable alternative connection of each CP equipment (7) with the telecommunication local switch (5). Figure 4 depicts the common slave sockets of figure 2. Switch (SSW2) selectively enables exclusive communication between a CPE and the local switch (5). In this way *leakage signals* (i.e. speech from a first CPE) generated during a conversation cannot propagate from a *first communication connection* (i.e. a first CPE) to a *second communication connection* (i.e. a second CPE). While the system of Nolde anticipates preventing leakage signal propagation between communication connections, there is no specific disclosure, teaching or suggestion pertaining to the structure of the telecommunication local switch (5). Therefore, Nolde

anticipates all limitations of the claim with at least the exception of a *multiple virtual line transmitter*.

Referring again to figure 2 of Nolde, a telecommunication local switch is provided in the traditional role of supplying analog telephony signals to a customer premise (2). Since the structure of this device is unrelated to the operation of the socket network implemented at the customer premise, it is valid that any known prior art structure capable of supplying analog telephony signals is necessary for fulfilling the expected function and inherently obvious. To this end, consider the subscriber circuit of Yoshida. See Abstract thereof. Figure 15 depicts one particular embodiment where two line drivers (AP1) and (AP2) independently drive one of a tip and ring line with in-phase and anti-phase signals. Each amplifier is arranged in the voltage follower configuration, defining an essentially zero output impedance as claimed. Used in conjunction with the socket network at the customer's premise, the line driver of figure 15 corresponds to a multiple virtual line transmitter since it is supplying signals to a plurality of CPE that behave as if they were independent lines.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide analog telephony signals using the line driver as taught by Yoshida since analog signals must be provided to the CPE of Nolde by some type of line driver, and because the line driver of Nolde incorporates numerous advantages over other known prior art as laid out in the background of the invention of Yoshida. See column 1, line 10, through column 8, line 51.

Claim 2 is limited to *the system of claim 1*, as covered by Nolde in view of Yoshida. Figure 15 clearly depicts that each line driving amplifier (AP1) and (AP2) is configured as a *negative feedback amplifier*. Therefore, Nolde in view of Yoshida makes obvious all limitations of the claim.

Claim 3 is limited to *the system of claim 1*, as covered by Nolde in view of Yoshida. Although not explicitly depicted or disclosed, the socket network and telecommunications local switch are capable of being reproduced and associated with each other in other ends of the PSTN (1). In fact, it is a mere matter of replicating parts while not producing any unknown or nonobvious results and cannot be held as nonobvious in view of the prior art used in the rejection of claim 1. See *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960). Therefore, Nolde in view of Yoshida makes obvious all limitations of the claim.

Claim 12 is limited to *the system of claim 1*, as covered by Nolde in view of Yoshida. Figure 2 of Nolde clearly depicts that each slave socket is commonly connected to the intelligent socket 911), which indicates that both the *first* and *second communication connections* are *physically coupled*. Therefore, Nolde in view of Yoshida makes obvious all limitations of the claim.

Claim 13 is limited to *the system of claim 1*, as covered by Nolde in view of Yoshida. Figure 2 of Nolde clearly depicts that each slave socket (i.e. *the plurality of communication connections*) is commonly connected to the intelligent socket 911. Therefore, Nolde in view of Yoshida makes obvious all limitations of the claim.

Claim 14 is limited to *the system of claim 1*, as covered by Nolde in view of Yoshida. Figure 2 indicates that each slave socket and corresponding CPE (7) are coupled to the same subscriber loop (4), which means they are all connected to the line driver (i.e. *MVL transmitter*) as taught by Yoshida. Therefore, Nolde in view of Yoshida makes obvious all limitations of the claim.

Claim 18 is limited to *the system of claim 1*, as covered by Nolde in view of Yoshida. In accordance with the rules of a subscriber loop operating under POTS signaling, incoming calls will be directed to the appropriate CPE in the order they are received, such that a *time multiplexing of signals onto a single channel* occurs. Therefore, Nolde in view of Yoshida makes obvious all limitations of the claim.

Claim 20 is limited to *the system of claim 1*, as covered by Nolde in view of Yoshida. As shown in the rejection of claim 18, the combination of Nolde and Yoshida includes a *multiplexing transmitter*. Therefore, Nolde in view of Yoshida makes obvious all limitations of the claim.

4. **Claims 4, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nolde in view of Yoshida and further in view of Fadavi-Ardekani et al. (US Patent 6,707,822).**

Claim 4 is limited to *the system of claim 1*, as covered by Nolde in view of Yoshida. The combination of Nolde and Yoshida provides for the reception of analog telephony signals, such as those associated with POTS signaling, however, there is no disclosure, teaching or suggestion within the references concerning digital subscriber line technology (DSL). Therefore, the combination of Nolde and Yoshida makes

obvious all limitations of the claim with at least the exception *wherein at least one of said plurality of communication connections is a digital subscriber loop*.

It is well established that DSL technology allows enhanced bandwidth over a majority of currently deployed twisted wire pairs. See Fadavi-Ardekani column 1, line 13, through column 2, line 59. However, in order to ensure proper operation, a customer's premise must be outfitted with appropriate filtering technology. See column 1, line 51-53. To this end, Fadavi-Ardekani teaches a multi-session asymmetric digital subscriber line buffering and scheduling apparatus and method. As seen in figure 1, a splitter is included at the customer's premise, where high-frequency data signals are coupled only to data receiving devices (150) and low-frequency voice signals are coupled only to voice receiving devices (152) and (156).

It would have been obvious to one of ordinary skill in the art to transmit both POTS and DSL signals through frequency-division multiplexing as taught by Fadavi-Ardekani to the customer premise described by the combination of Nolde in view of Yoshida for the purpose of enabling high-bandwidth data transmission, which are desirable for Internet access and high-data rate interactive services such as video on demand. See Fadavi-Ardekani column 1, lines 13-15.

Claim 19 is limited to *the system of claim 1*, as covered by Nolde in view of Yoshida. The combination of Nolde and Yoshida provides for the reception of analog telephony signals, such as those associated with POTS signaling, however, there is no disclosure, teaching or suggestion within the references concerning digital subscriber line technology (DSL). Therefore, the combination of Nolde and Yoshida makes

obvious all limitations of the claim with at least the exception *wherein said MVL transmitter frequency multiplexes a plurality of signals onto a plurality of channels.*

It is well established that DSL technology allows enhanced bandwidth over a majority of currently deployed twisted wire pairs. See Fadavi-Ardekani column 1, line 13, through column 2, line 59. However, in order to ensure proper operation, a customer's premise must be outfitted with appropriate filtering technology. See column 1, line 51-53. To this end, Fadavi-Ardekani teaches a multi-session asymmetric digital subscriber line buffering and scheduling apparatus and method. As seen in figure 1, a splitter is included at the customer's premise, where high-frequency data signals are coupled only to data receiving devices (150) and low-frequency voice signals are coupled only to voice receiving devices (152) and (156).

It would have been obvious to one of ordinary skill in the art to transmit both POTS and DSL signals through frequency-division multiplexing as taught by Fadavi-Ardekani to the customer premise described by the combination of Nolde in view of Yoshida for the purpose of enabling high-bandwidth data transmission, which are desirable for Internet access and high-data rate interactive services such as video on demand. See Fadavi-Ardekani column 1, lines 13-15.

Claim 20 is limited to *the system of claim 1*, as covered by Nolde in view of Yoshida. As shown in the rejection of claim 19, the combination of Nolde and Yoshida and further in view of Fadavi-Ardekani includes a *multiplexing transmitter*. Therefore, Nolde in view of Yoshida and further in view of Fadavi-Ardekani makes obvious all limitations of the claim.

Response to Arguments

Applicant's arguments filed 14 April 2005 with respect to claims 1-5, 12-14 and 18-22 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F. Briney III whose telephone number is 571-272-7513. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SINH TRAN
SUPERVISORY PATENT EXAMINER

WFB
7/18/05